



# Developing caBIG™ Training Modules: A How-To Guide

Prepared by the  
caBIG™ Training Workspace

# Session Overview

- This is a hands-on working guide that walks through developing a caBIG™ training module.
- It covers basic steps to create a training module in real time using caBIG™ templates.
- Our audience is anyone developing training modules for caBIG™



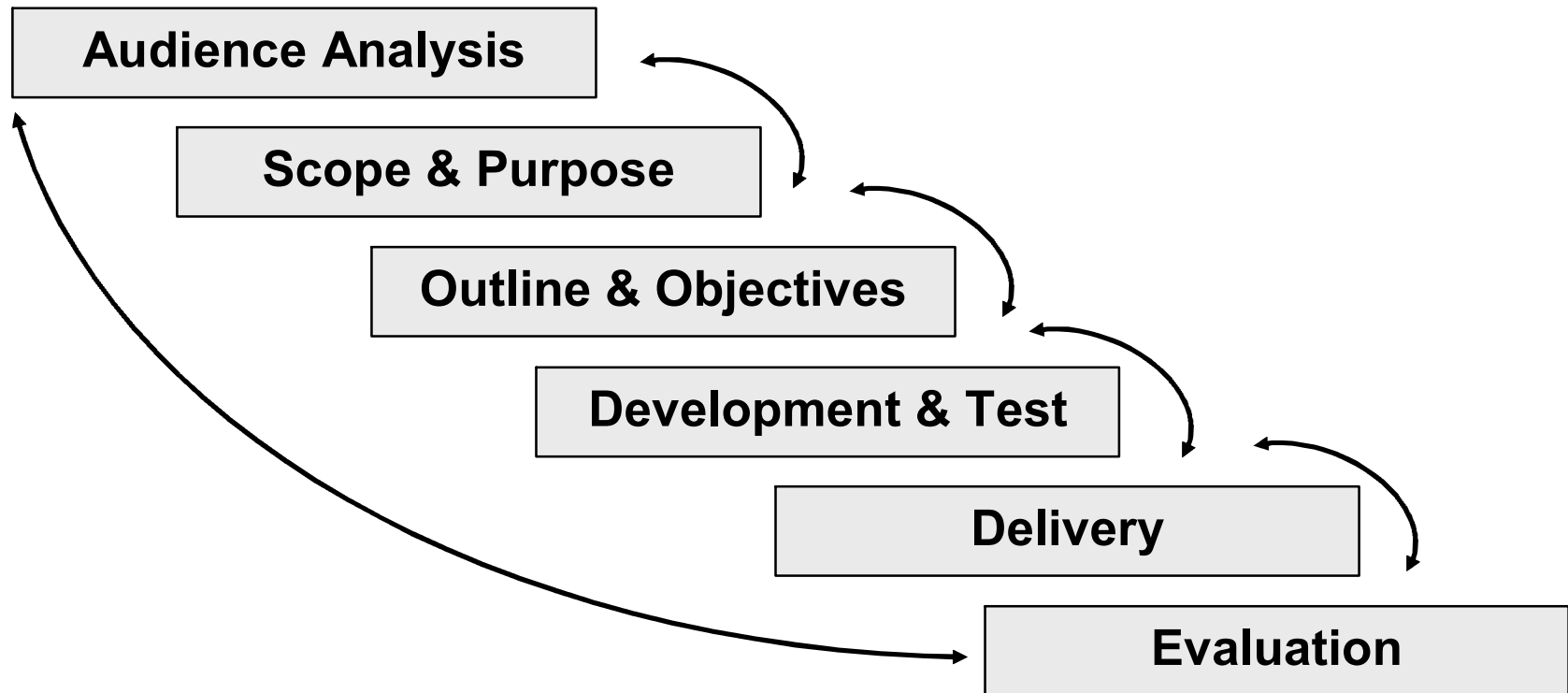
# Objectives

- By the end of this guide, you will be able to:
  - List the six steps of the training development life cycle
  - Describe the process elements of each step
  - Access caBIG™ templates that support the training development process
  - Use the templates to construct training that works
  - Access additional resources to assist in training development



# The Training Life Cycle

- Training development follows a sequence similar to the systems development process.



# The Basic Steps

- **Audience Analysis**
- Scope & Purpose
- Outline & Objectives
- Development & Test
- Delivery
- Evaluation


## Who is the Audience?

Project Role  
Demographics  
Motivation/Interest  
Resources  
Timeframe  
Prerequisites  
Training Needs


**Template:**  
Audience Analysis



# Audience Analysis

 <b>caBIG™</b> Cancer Biomedical Informatics Grid™ an initiative of the National Cancer Institute			
<b>Audience Analysis - Needs Assessment</b>			
Ask:	Who?	What?	When? Where? Why? How? How Much?
<b>Focus</b>	<b>Level</b>	<b>Specific Training Audience</b>	
<input type="checkbox"/>	Management		
<input type="checkbox"/>	Developers		
<input type="checkbox"/>	End Users		
<input type="checkbox"/>	Data/Output Consumers		
<input type="checkbox"/>	Other		
Who comprises the audience for the training?			
<b>Project Role(s):</b> What project/program role would require someone to take this training? What task or job does it support?			
<b>Demographics?</b> How many people are likely to require training? Where are they located (single site, multiple sites)?			
<b>Reasons for Taking Training?</b> Why would someone want to take this training? What is the likely interest level? What's in it for the audience?			
<b>Resources?</b> What resources are available to support training? (e.g., classroom availability, computer/Internet access).			
<b>Timeframe?</b> When will your audience take the training? At what stage of the development life cycle? Are there constraints on the duration or time window of the training?			
<b>Other Considerations?</b> Examples: Does training support a required certification?			
Training Project Name: _____ Completed by: _____ Date: _____			

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What should the audience <u>already know</u> before taking the training (entry criteria)?	
<b>Audience Identification:</b> Who is the target audience for the training, and what qualifies them to take the training?	
<b>Domain Knowledge</b> Subject matter expertise, relevant pre-existing knowledge, workflow understanding.	
<b>Technical Knowledge</b> Likely comfort level with topic? Likely experience with similar applications/products/processes?	
<b>Other Prerequisites?</b>	
What should the audience know after they have completed the training?	
<b>Use Case:</b> What must your audience be able to do at the end of the training? What tasks or activities must they be able to perform they can not now do?	
<b>Domain Knowledge</b> New or different subject matter? Use of a new tool/application? Process/workflow changes?	
<b>Technical Knowledge</b> <ul style="list-style-type: none"> <li>What functions do they need to know?</li> <li>When will they use those functions?</li> <li>Where will they use the application?</li> <li>Why will they use the application?</li> <li>How will they use the application?</li> <li>How much/often will they use the application?</li> </ul>	
<b>Other Ideas/Comments</b>	
Training Project Name: _____ Completed by: _____ Date: _____	

# The Basic Steps

- Audience Analysis
- **Scope & Purpose**
- Outline & Objectives
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- Evaluation

## **What is the Scope & Purpose of Training?**

Overview  
Purpose and Goals  
Audience Analysis Summary  
Proposed Training Setting  
Content Resources  
Leadership


### **Template:**

Project Scope and  
Purpose Statement



# Scope and Purpose

- Defines the training purpose
- Presents overall goal of the training project
- Summarizes the Audience Analysis
- Proposes training setting
- Outlines required resources for training
- Lists leaders involved

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Project Scope & Purpose Statement	
<b>Overview:</b> What is the training project to be completed? Provide a brief description of the subject being taught and an overview of the training being provided.	
<b>Training Purpose:</b> What is the primary purpose of the training? What is the overall goal of the training project?	
<b>Audience:</b> Who is the intended audience for the training? Provide a summary of the Audience Analysis. Include possible number to be trained and their geographic distribution.	
<b>Proposed Training Setting:</b> How is training to be conducted? Where (e.g., classroom/workshop, computer-based on their own time, computer-based guided by an instructor)? How often will training be offered?	
<b>Content Resources:</b> How will you gather information to formulate and guide/structure the content of the training? What resources do you need to develop training, and where will that come from? What training materials will be needed for the course itself?	
<b>Leadership:</b> Who is the lead for training development? Who will provide expertise on the content being taught?	
<b>Other Comments:</b> What additional items need to be included in the scope of the project?	

Training Project Name: \_\_\_\_\_  
 Completed by: \_\_\_\_\_ Date: \_\_\_\_\_



# Identifying Content Resources

- Part of developing training scope includes identifying resources to support future content development.
  - Uses Cases
  - Requirements \*
  - Test Plans \*
  - User Documentation \*
  - Help Guides/FAQ's
  - Demonstrations
  - Briefings
  - Websites
  - Marketing Materials
  - Subject Matter Experts
  - Hands-On “Day in Life”
- \* - Some of these items should be available for the project in GForge.

# Proposed Training Format

- Scope of training delivery methods will vary based on audience needs and timeframe. Examples:

Instructor-led classroom	Small (<50), local learner community; material requires discussion or group interaction to learn effectively.
Computer based training (CBT) and CD-ROM	Distributed (>3 sites), large audience (>50 people) with unreliable/slow network or hard-to-schedule timing. Content is stable/static, so not outdated quickly.
Web-based training (WBT) – Could include Wiki's	Distributed, large audience with network access. Evolving content centrally managed for easy updates. Can be instructor led with interaction, or self-paced.
On-the-job training or Mentoring	Low teacher-learner ratio (1:few). Experiential learning for specialized tasks, advanced application, or where apprenticing is needed to learn specific nuances.
Job aids (Manuals, Help Tools, Workbooks, Quick Guides)	Individual learning/ongoing reference while on the job. Topic-specific help, stable content



# The Basic Steps

- Audience Analysis
- Scope & Purpose
- **Outline & Objectives**
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- Delivery
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**How Will Training Be Structured? What are the Objectives?**

- Create Topic Level Outline
  - List SMART Objectives
  - Map Detailed Outline

**Template:**

Outline & Objectives



# Outline & Objectives



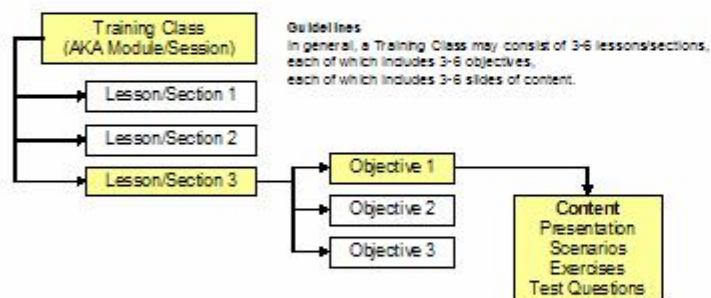
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## Training Outline and Objectives

A training outline drives training content and ultimately frames and determines the flow of materials. The goal of this step is to organize ideas into a logical form that tracks to the needs of the audience, and shows the relationship between content being taught. The result is an ordered overview of your training.

Building an outline requires understanding how classes break into lessons and objectives. As the figure below shows, a **training class** (also called a **module or session**) may be made up of multiple **lessons or sections**, which are collections of **learning objectives**. Learning objectives are made up of **content**, usually organized into slides or screens (for presentation materials). Content can include the presentation of information, scenarios, exercises and/or test questions related to the objective.

**Training Classes/Modules/Sessions** may either stand independently, or be a module with a broader course (e.g., Introduction to caBIG™).



### Lesson/Section Outline

Lesson #	Lesson/Section Name	Lesson/Section – Overall Purpose/General Description (1 sentence)
1		
2		
3		
ETC		

Training Project Name: \_\_\_\_\_  
Completed by: \_\_\_\_\_ Date: \_\_\_\_\_



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## SMART Objectives

Next step: Write SMART objectives that fill the needs of your audience, and then map them against the lessons defined above. SMART learning objectives must be specific, measurable, agreed upon, realistic, and tangible. This is important to the success of any training program, especially ones designed for adult learners. SMART objectives are written using words that are concrete and actionable (think "verbs"). Examples:

- Compute
- Demonstrate
- Describe
- Determine
- Distinguish
- Use
- Enter
- Establish
- Explain
- List
- Locate
- Practice
- Prepare
- Present
- Provide
- Show

Examples: **Present** the skills obtained in today's lesson to your colleagues.  
**List** the order of operations in which to perform the task.  
**Explain** the differences between caDSR and EVS when searching terms.  
**Demonstrate** the techniques used to annotate a document.

## Detailed Outline

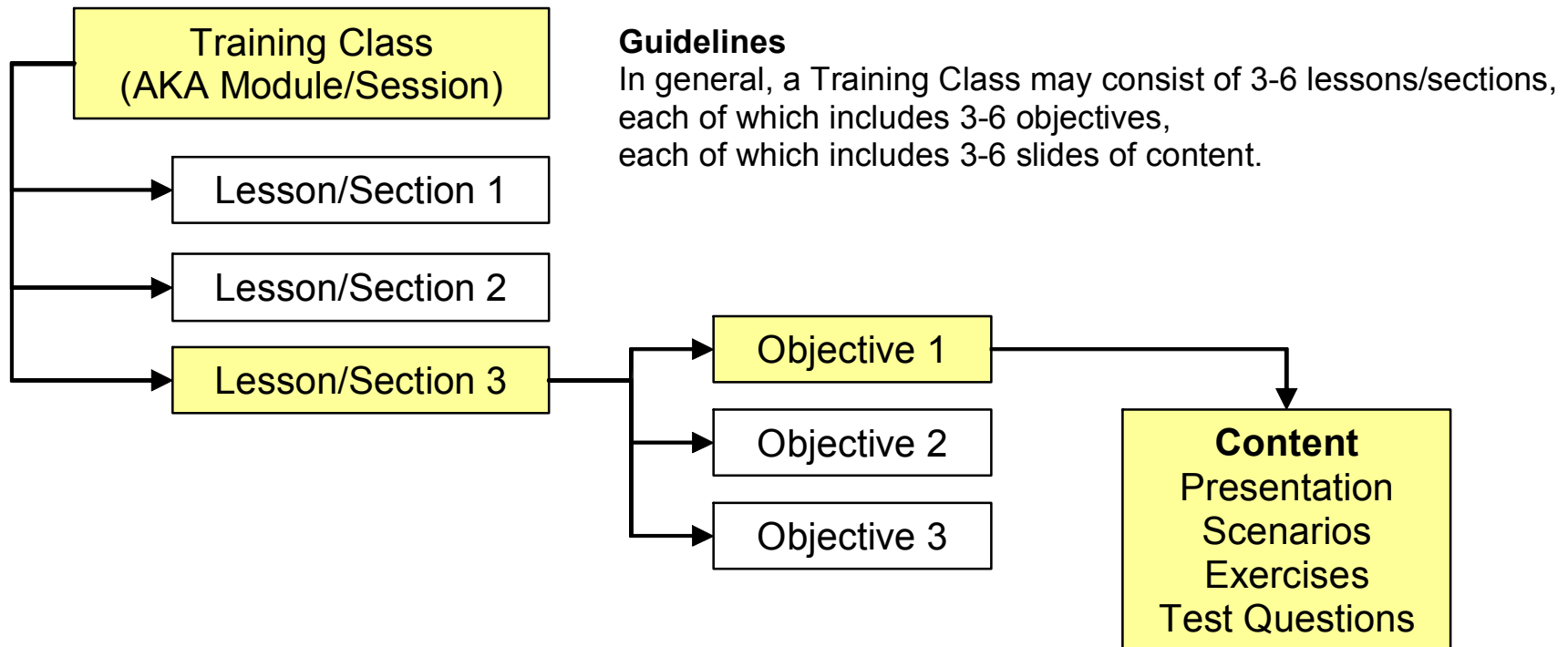
Map the SMART objectives developed above against the topic-level outline to result in a detailed outline.

Lesson #	Lesson	SMART Objectives	Content Ideas and Sources*
1		1-1	
		1-2	
		1-3	
2		2-1	
		2-2	
		2-3	
3		3-1	
		3-2	
		3-3	
4		4-1	
		4-2	
		4-3	

\* Once written down in outline form, content ideas lead to slides/screens with content (presentation, exercises, scenarios, test questions) that teach the learning objective.

Training Project Name: \_\_\_\_\_  
Completed by: \_\_\_\_\_ Date: \_\_\_\_\_

# Topic Level Outline



# SMART Objectives

- Writing SMART objectives is important to the success of any training program
  - **Specific** – Targeted, clear and not vague
  - **Measurable** – Helps determine if a goal is achieved
  - **Attainable/Achievable** – Links to a measurable outcome; Determines if objective is realistic
  - **Relevant** – Applies to audience; establishes context
  - **Timely** – Helps further identify the goal



# SMART Objectives - Sample Verbs

- Compute
- Demonstrate
- Describe
- Determine
- Distinguish
- Enter
- Establish
- Explain
- List
- Locate
- Practice
- Prepare
- Present
- Provide
- Show
- Use



# Detailed Outline

- Next, map SMART objectives against the topic-level outline to develop a detailed outline.

Lesson #	Lesson	SMART Objectives	Content Ideas and Sources*
1		1-1	
		1-2	
		1-3	
2		2-1	
		2-2	
		2-3	
3		3-1	
		3-2	
		3-3	
4		4-1	
		4-2	
		4-3	





# The Basic Steps

- Audience Analysis
- Scope & Purpose
- Outline & Objectives
- **Development & Test**
- Delivery
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## **Populate caBIG™ Training Templates**

Use Audience Analysis,  
Scope/Purpose, Outline,  
Objectives, and Existing  
Content as Guides

### **Templates:**

Overview Training Template  
Hands-On Training Template  
([Link to Training Portal](#))



# caBIG™ Training Templates

- The caBIG™ Training Workspace has developed two templates for training materials
  - Overview – For general introduction
  - Hands-On – To demonstrate application use

# Training Development

- Structure subject matter into the templates:
  - Structure material into small “chunks”
  - Map content against your objectives
  - Use bullet points, call-outs and screen shots to communicate content and fulfill objectives
  - Develop hands-on activities where appropriate
  - Mix content presentation with scenarios (use cases)
  - Ask questions to engage audience in materials
  - Include references to other information sources
  - Maintain structure and format consistency

# Training Development – Sample Slides

## Session Details: Session Objectives

- ▶ When you leave today, you will be able to:
  1. Identify the major components of caCORE
  2. Describe the relationship between caDSR and other caCORE components

## caCORE Training caDSR and caCORE Overview

**Course Number:** 100  
**Session Length:** 90 Minutes  
**Target Audience:** caDSR Users and Metadata Consumers  
**Trainer:** Jennifer Brush  
 jbrush@scenpro.com  
**NCICB Liaison / Expert Curator:** Dianne Reeves  
 reevesd@mail.nih.gov

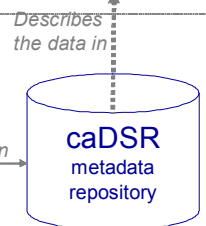
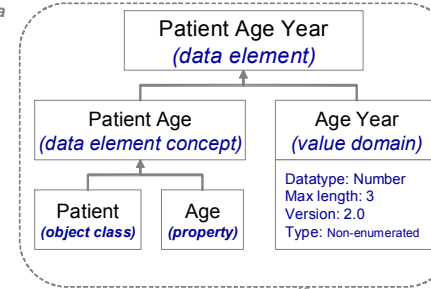
## caDSR Overview: Metadata Example: Patient Age in Years

**Data**

What is your age?: **32**



**Metadata**  
*Describes data*



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# Checking Your Materials

- Check fonts for size and consistency
- Keep callouts, lines, arrows the same color
- View the entire presentation as a slide show
- Verify bullets consistency between slides
- Check to see if graphics overlap text
- Verify terminology is consistent
- Confirm content includes objectives & reviews
- Ensure objectives are covered in the review
- Double check hyperlinks (if applicable)



# Testing Your Materials

- Conduct test runs of training to ensure that:
  - Learning objectives are fulfilled by the materials
  - Delivery can be accomplished in the time allotted
- After you have developed your training, submit to Training WS for review
  - Visit <https://cabig.nci.nih.gov/training/evaluation.html> for review guidelines and checklists

# The Basic Steps

- Audience Analysis
- Scope & Purpose
- Outline & Objectives
- Development & Test
- **Delivery**
- Evaluation

## Delivering Training

Needs will vary based on training delivery method.

Common elements:

- Logistics Management
- Communication with Audience
  - Supporting Materials
  - Certificates
- Training Feedback Form



# Delivery Considerations

- If Classroom...
  - Check out room layout and resources in advance.
  - Have your materials ready to go, including technology.
  - Begin and end on time.
  - Practice, Practice, Practice!
  - Engage your audience with questions, scenarios and focused discussion.
  - The best trainers facilitate learning in a supportive yet structured way.
- If Computer Based...
  - Know where content will be housed and how audience will access it
  - If instructor-led, test interaction between instructor, audience and technology
  - Keep track of content over time, and update as needed.
  - Find ways to engage audience (forums, discussion boards)





# The Basic Steps

- Audience Analysis
- Scope & Purpose
- Outline & Objectives
- Development & Test
- Delivery
- **Evaluation**

## How Do You Know Your Training Worked?

- Confirm objectives were met
- Improve training materials
  - Identify future needs

### Templates:

Training Evaluation Form



# Sample Evaluation Form



## caBIG™ Training Session - Feedback and Evaluation

1. Name/Contact (Optional):  
(If you ask a question or have a request needing a response, please include contact information)
2. caBIG™ Workspace (if applicable) \_\_\_\_\_
3. Role: \_\_\_\_\_

Please place a check or "X" in the box that best reflects your answer to each question below:

Did the training meet its objectives?	Did Not Meet Expectations	Met Expectations	Exceeded Expectations	Not Applicable
Trainer: List objectives of your training in the spaces below.				

### Overall Course Evaluation

Course Design	Did Not Meet Expectations	Met Expectations	Exceeded Expectations	Not Applicable
Difficulty of course:				
Pace of course:				
Length of course:				
Content covered in course:				
Time allocated for questions:				
<b>Training Environment (DELETE SECTION FOR CBT/WBT)</b>				
Classroom location:				
Room set up:				
Room temperature:				
Room acoustics:				
Appropriate use of technology:				
<b>Content Presentation</b>				
Organization/logical order of content:				
Quality of course slides & handouts:				
Relevance of materials:				
Quality of exercises:				
Supportiveness of trainer:				
Ability to relate material to job tasks:				
Clarity of presentations/explanations:				

Training Project Name: \_\_\_\_\_  
Training Lead: \_\_\_\_\_ Date: \_\_\_\_\_



Overall Assessment	Did Not Meet Expectations	Met Expectations	Exceeded Expectations	Not Applicable
Overall assessment of learning experience:				

What went well for you during this training? What should we keep doing next time?

What didn't go so well for you? What would you like to see done differently next time?

What other courses would you like to see offered?

What else would you like to tell us?

Training Project Name: \_\_\_\_\_  
Training Lead: \_\_\_\_\_ Date: \_\_\_\_\_

# List of Available Templates

- Audience Analysis
- Project Scope and Purpose
- Outline and Objectives
- Training PowerPoint Templates (Overview / Hands-On)
- Course Evaluation Form

These materials will be available through the  
caBIG™ Training Portal by the end of April 2006.

<https://cabig.nci.nih.gov/training>



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# References & Resources

- caBIG™ Training Portal  
<https://cabig.nci.nih.gov/training/>
- Documentation & Training Gforge Collaboration Site:  
<http://gforge.nci.nih.gov/projects/cabig-tws/>
- Training WS Mentors – Request through NCICB  
E-Mail: [ncicb@pop.nci.nih.gov](mailto:ncicb@pop.nci.nih.gov)
- caBIG™ Training Workspace  
[https://cabig.nci.nih.gov/working\\_groups/Training\\_SLWG](https://cabig.nci.nih.gov/working_groups/Training_SLWG)
- Documentation and Training Questions Listserv  
[https://list.nih.gov/archives/cabig\\_bc\\_train-l.html](https://list.nih.gov/archives/cabig_bc_train-l.html)



# Review.....

- The guide is complete! Can you:
  - List the six steps of the training development life cycle
  - Describe the process elements of each step
  - Access caBIG™ templates that support the training development process
  - Use the templates to construct training that works
  - Access additional resources to assist in training development

# Contact Us With Feedback!

Write to us at [CABIG\\_BC\\_TRAIN-L@list.nih.gov](mailto:CABIG_BC_TRAIN-L@list.nih.gov)



Members of the caBIG™ Training Workspace (WS)  
March 2006



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